Guidelines for using the Additive Work Bidding Special Provision 00516S

Purpose

The purpose for this special provision is to provide a tool to develop a project with a scope that falls within the budget while allowing for additional scope to be awarded if favorable bids are received.

This method is not desirable for all projects. It may be useful in cases where there is some uncertainty about the realistic costs of a project, and features of the project can be incrementally scoped. Examples would be adjusting the project length of the base bid with additional length(s) as additive(s), or a base of roadway work with lighting as an additive. The project must be viable and fulfill its basic purpose if only the base package can be awarded. As with any procurement method, the goals of the project must be clearly understood in order to determine the procurement method that is most likely to lead to success.

Design Considerations

The decision to use this type of awarding method should be made as soon as it is apparent that the engineer's estimate is higher than the available funding. This allows for the development of additional items with the associated quantities, plans, specifications, and details. Each additive package must be contained within its own detail on the engineer's estimate. Deciding to resort to this method too late will result in additional design costs and undesirable delays.

In order to avoid the appearance of subjectivity, the Department makes a commitment to award the maximum amount of work within the budget. The Department also will not seek additional funding beyond the identified amount if the additional funding changes the low bidder.

The intent is to design a project scope that is well within the project budget, while providing for additional desired work items to be awarded if budget allows. The dollar value of each additive segment should be small enough so as to increase the likelihood of being able to include one or more of them in the award.

Each Additive must have its own set of plan, detail, and summary sheets that clearly define the work and distinguish between the base package work items and quantities and the items and quantities associated with each additive package. The measurement and payment document should also be divided into sections to distinguish which items of work are included in the base and each additive. There should be unique items for each segment. In other words, if each segment has UTBC as a work item, each segment should have a unique bid item for UTBC with an associated quantity. Each additive segment should include an item for general work requirements such as traffic control, mobilization, public information services, and survey.

It is important to prioritize additives such that the most important additive is number 1 with each subsequent additive decreasing in importance. Additives must be awarded in order. This ensures that awarded items of work are not manipulated to select a contractor on any other criteria than low bid.

See the end of this document for example sheet indexes, additive title sheet, additive summary sheet, additive typical section, additive plan sheet, and Measurement and Payment.

The contract should clearly identify the contract time for the base work and the additional time allocated for each additive segment. The actual contract time is determined by adding the base time to each additive segment time included in the contract.

Several items such as traffic control, mobilization, public information services, and survey are paid automatically at certain times of the contract. It might not be desirable to use the standard payment method for these items on additives. This is especially true when the contractor will not begin work on the additives until significantly later during construction. Modifying the measurement and payment for these items used for additives might be desirable to reflect the anticipated construction schedule. Contact the Construction Division for further guidance if necessary.

Special Provisions

When using additive item bidding, use the attached **00516S** as a boilerplate guideline. Modify the special provision so that the additive and bid item numbers match the applicable project. Determine and define the contract time for the base bid and additives.

Advertising Checklist

Indicate that Additive Bidding applies to the project under the item for assemble special provision and supplemental specifications book. Provide the budget amount on the line next to additive bidding. The budget amount is the maximum funding available for construction, or the total amount available to award to a contractor. This amount will be less than the total engineer's estimate including the additives. Remember that this is **not** the total project value which includes non bid items such as preliminary engineering, construction engineering, etc. Providing the budget enables the Construction Division to make the necessary arrangements for posting the budget amount to the website for the contractors after all bids are submitted, but prior to bid opening.

Civil Rights Issue

On Federal Aid projects, **a DBE** goal for each possible award scenario must be specified in the contract. In other words, a goal must be defined if only the base is awarded. A different goal must be specified if the base and additive #1 is awarded. And so on.

The paragraph above applies for **training** goals and **Davis-Bacon Wages** also. Contact the civil rights office as soon as possible during the project and notify them that the project is using additives when requesting goals.

PDBS Entry

Additives should each have a separate detail in PDBS. Use detail 75 – MISC Bid for all additives and indicate the additive number in the description. Create a separate detail for change order contingency for each additive as well. See Figure 1 for an example of how this is to be done.

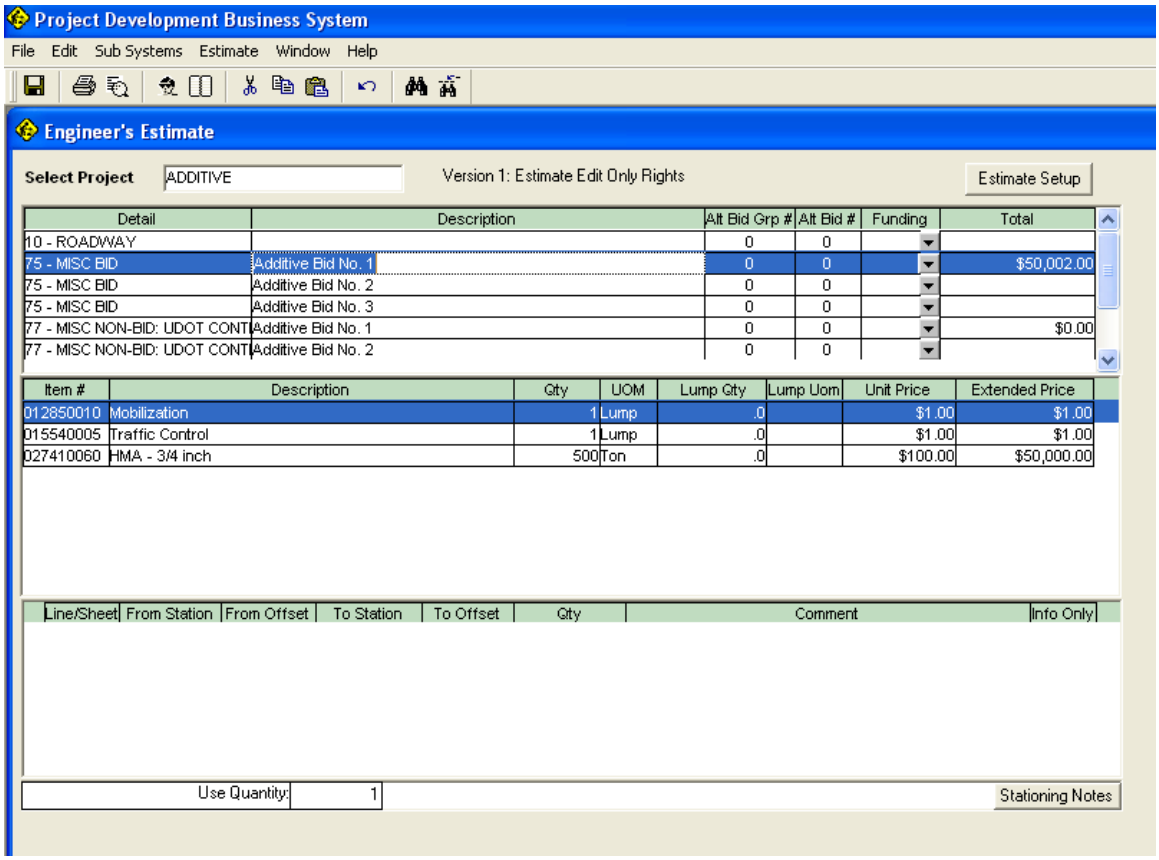


Figure 1 – PDBS Entry of Additives

STATE ADVERTISING CHECKLIST

September 11, 2008

Project Number:						
Project Name or Location:						
Concept:						
Bid Opening Date:						
Project Length:	Feet/ Miles	Counties:		Urban/Rural		
Engineer's Estimate:	$	Funding Type:				
Ref. Post Begin:		Ref. Post End:				
Contract Time: In days	Working Days	TBD by Bid	Calendar Days		Completion Date	
(CID) Job/Project:		PIN:				
Designer's Name:		Designer's Phone:				
Consultant Name and Address:						

Enter TBD (To Be Determined) by Bid in the working days or calendar days box, depending on which will be used on the project.

I certify this bid package:

Consultant Project Manager ____________ Date ____________

Designer Project Support Staff ____________ Date ____________

UDOT Designer ____________ Date ____________

UDOT Project Support Staff ____________ Date ____________

UDOT Project Manager ____________ Date ____________
Certified and received complete advertising package

This bid package has been checked for bid-ability and constructability and is ready for advertising:

Resident Engineer ____________ Date ____________

Region Pre Construction Engineer ____________ Date ____________

***************************************CONSTRUCTION DEPARTMENT USE ONLY***

Advertise Date		Region	
DBE		Wage Rates	
PM		RE	
Items		Book	

Check one of the following that applies to this project:

New Construction, Reconstruction, Major Rehabilitation, Minor Rehabilitation with complications, Widening, Operational Safety Spot Improvement, Bike Trails, Park and Ride, Landscaping, and Enhancement – Green	
Contractual Pavement Preventive Maintenance – Orange	
Bridge Preservation – Green	
Operational Safety Spot Improvement – Red	
ATMS – Green	
Comments and Special Instructions:	

Check the applicable boxes, depending on project type

	Include Items with Advertising Packet	Initial or N/A and date
1.	Signed Right-of-Way Certification	
2.	Signed Utilities Certification and Region betterment and cooperative agreements	
3.	Signed Region Traffic Certification	
4.	QC/QA Bridge Design Certification for all Structure Projects	
5.	T-725 sent to Systems Planning and Programming	
6.	Engineer's Estimate	
7.	Non-participating funding sources or Local Government Betterments Yes _____ No _____	
8.	Assignment Order Form C-050	
9.	Maintenance memo and approval form for Maintenance, ATMS, and Structure Maintenance projects **ONLY**.	
10.	Risk Assessment Checklist and Risk Management E-mail OCIP _____ Railroad _____	
11.	Local Government Project defines construction engineering and has signed co-op agreement or signed consultant contract	
12.	Project Design Criteria (PDC) Not required on purple or orange books	
13.	Environmental Study front page and signature page	
14.	Assemble Special Provision and Supplemental Specifications Book. Special Provision if applicable: ☐ 00250S Mandatory Pre-Bid meeting ☐ Lane Rental ☐ Price plus time bidding(A+B) ☐ 00516S Additive Work Bidding – Budget Amount_____ Indicate Projects Numbers combined or stacked with this project: _____ _____	
15.	Check for accuracy, bid items numbers and names on the Engineer's Estimate, Plan Sheets, Measurement and Payment, and Summary sheets.	
16.	Project No., Project Name, Concept, and County on the Title Plan Sheet and Engineers Estimate match exactly the ePM, screen 710	
17.	Print random plan sheets from the CD or DVD to verify the title sheet is signed and stamped, that the plan sheets are signed as necessary, and are in order of Index Sheet 1-A. Print plan sheets and deliver to the UDOT Project Manager if plans are to be hand signed.	
18.	CD or DVD: Table of Contents and everything included in the advertising package. Include CADD files, and signed PDF of plan sheets, and Iplot if available.	

Check the box for Additive Work Bidding and provide the budget amount available for award on the line next to Budget Amount.

October 16, 2008

SPECIAL PROVISION

PROJECT #

SECTION 00516S

ADDITIVE WORK BIDDING

Add Section 00516:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Requirements of Additive Work Bidding.

1.2 RELATED SECTIONS Not Used

1.3 REFERENCES Not Used

1.4 DEFINITIONS Not Used

1.5 SUBMITTALS Not Used

1.6 BUDGET MAXIMIZATION

A. The Department has a set budget for this project and intends to award the maximum amount of work within that budget. The budget amount will be posted to the UDOT bid opening information website after 2:00 p.m. on the day scheduled for bid opening, prior to opening the bids.

B. The work is divided into segments for bidding purposes.
   1. Base bid: Contract bid items _____
   2. Additive bid No. 1: Contract bid items _____
   3. Additive bid No. 2: Contract bid items _____
   4. Additive bid No. 3: Contract Bid items _____

Insert bid item number ranges here for the base and each additive. This should match the estimate and Measurement and Payment.

C. Provide prices for contract bid items for the base bid and all additives.

D. Any bid proposal submitted without prices for each item will be considered non-responsive.

1.7 BID PROPOSALS OVER PROJECT BUDGET

A. The segments are evaluated in the following order if all bid proposals for the base bid and all additives are greater than allocated project funds:
   1. Base Bid
   2. Additive Bid No. 1
   3. Additive Bid No. 2
   4. Additive Bid No. 3

Adjust the number of Additives to match the project.

B. The low bid includes the base work plus the most additives in the order listed above for a cost that is less than or equal to the project budget.
   1. Tables 1 and 2 provide an example of determining the lowest bid proposal.

Table 1

Example Allocated Funds = $25,000,000					
Contractor	**Base Bid**	**Additive Bid No.1**	**Additive Bid No. 2**	**Additive Bid No. 3**	**Total**
A	$ 18,900,000	$ 3,400,000	$ 2,000,000	$ 1,900,000	$ 26,200,000
B	$ 20,800,000	$ 2,000,000	$ 2,000,000	$ 1,200,000	$ 26,000,000
C	$ 18,500,000	$ 2,000,000	$ 5,000,000	$ 1,300,000	$ 26,800,000

   a. All total bid proposals exceed the allocated funds. Additive Bid No. 3 is therefore excluded from further consideration.
   b. Bid proposals are recalculated using the Base Bid and Additive Bid No. 1 and Additive Bid No. 2 as shown in Table 2.

Table 2

Example Allocated Funds = $25,000,000					
Contractor	**Base Bid**	**Additive Bid No.1**	**Additive Bid No. 2**		**Total**
A	$ 18,900,000	$ 3,400,000	$ 2,000,000		$ 24,300,000
B	$ 20,800,000	$ 2,000,000	$ 2,000,000		$ 24,800,000
C	$ 18,500,000	$ 2,000,000	$ 5,000,000		$ 25,500,000

   c. The contract is awarded to Contractor A for Base Bid, Additive Bid No. 1, and Additive Bid No. 2. The awarded contract amount is $24,300,000.

1.8 CONTRACT TIME

A. Contract time is determined by adding the time for the base bid and all additives that are awarded as shown in the table below.

Table 3

Contract Time	
Base Bid	(enter estimated time)
Additive Bid No. 1	(enter estimated time)
Additive Bid No. 2	(enter estimated time)
Additive Bid No. 3	(enter estimated time)

Insert calendar or working days for the base bid and each additive. This will determine the total contract time based on the work awarded.

1.9 ADDITIONAL FUNDING

A. The Department reserves the right to seek additional funding f project.

1. The Department will not seek additional funding for non additive bids if it changes the determination of the low b
2. Additional funding would not be sought in the above exa because adding funds to accommodate Additive Bid No result in a different low bid contractor.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SHEET INDEX

BASE BID - ROADWAY DRAWINGS

SHEET NUMBER	DESCRIPTION
1	TITLE SHEET
1-A	INDEX TO PLANS
1-B	STORM WATER POLLUTION PREVENTION PLAN
1-C	PLAN INDEX SHEET
1-D	SURVEY CONTROL SHEET
TS-1 to TS-2	TYPICAL SECTIONS
DT-1 to DT-10	DETAIL SHEETS
SM-1 to SM-7	SUMMARY SHEETS
RD-1 to RD-13	ROADWAY PLAN SHEETS
RP-1 to RP-13	ROADWAY PROFILE SHEETS
DR-1 to DR-13	DRAINAGE PLAN SHEETS
GR-1 to GR-41	ROADWAY CROSS SECTIONS SHEETS
GR-42	MASS HAUL DIAGRAM
WM-1 to WM-3	WETLAND MITIGATION SHEETS
1 to 3	QUESTAR PIPELINE RELOCATION PLANS

ADDITIVE BID #1 - ROADWAY DRAWINGS

SHEET NUMBER	DESCRIPTION
1-A-A1	ADDITIVE BID #1 TITLE SHEET AND INDEX TO PLANS
TS-1-A1	TYPICAL SECTIONS
DT-1-A1 to DT-3-A1	DETAIL SHEETS
SM-1-A1 to SM-6-A1	SUMMARY SHEETS
RD-1-A1 to RD-13-A1	ROADWAY PLAN SHEETS
SS-1-A1 to SS-13-A1	SIGNING AND STRIPING SHEETS

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN

DRAWN BY DB
QC CHECKED BY TY
DATE 2/19/08

APPROVED

PROFESSIONAL ENGINEER

PROJECT: BROWNS PARK ROAD
JESSE EWING CANYON

PROJECT NUMBER: STP-1364(4)15

INDEX TO PLANS

SHEET NO. 1-A

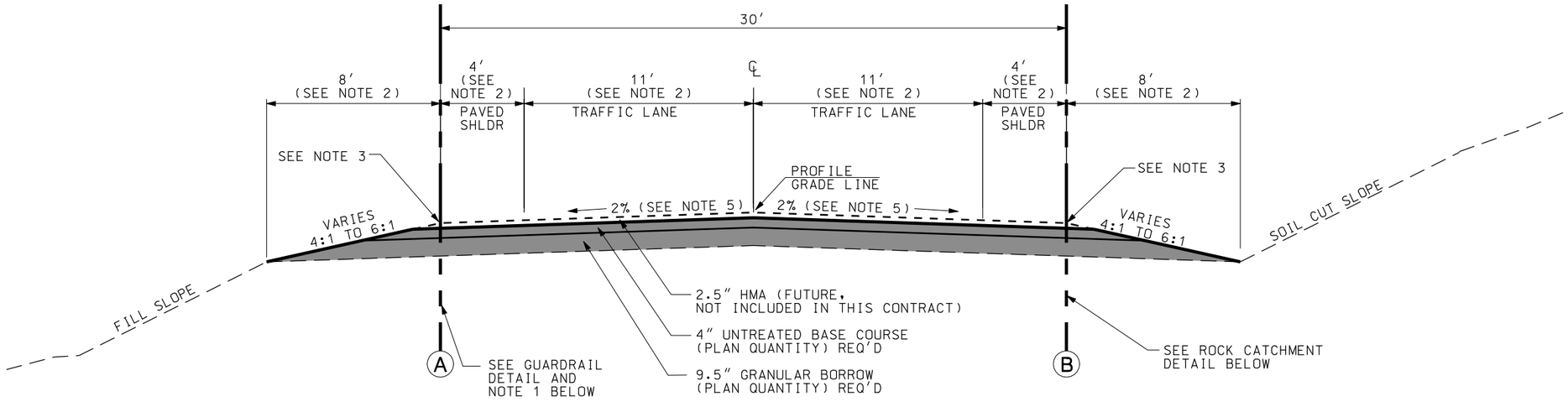
ADDITIVE BID #1

GRANUALS AND SAFETY

SHEET INDEX

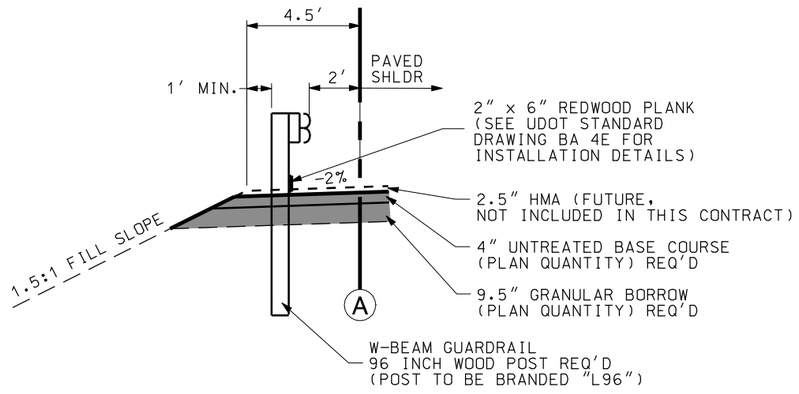
ROADWAY DRAWINGS	
SHEET NUMBER	D E S C R I P T I O N
1-A-A1	ADDITIVE BID #1 TITLE SHEET AND INDEX TO PLANS
TS-1-A1	TYPICAL SECTIONS
DT-1-A1 to DT-3-A1	DETAIL SHEETS
SM-1-A1 to SM-6-A1	SUMMARY SHEETS
RD-1-A1 to RD-13-A1	ROADWAY PLAN SHEETS
SS-1-A1 to SS-13-A1	SIGNING AND STRIPING SHEETS

SHEET NO.
1-A-A1



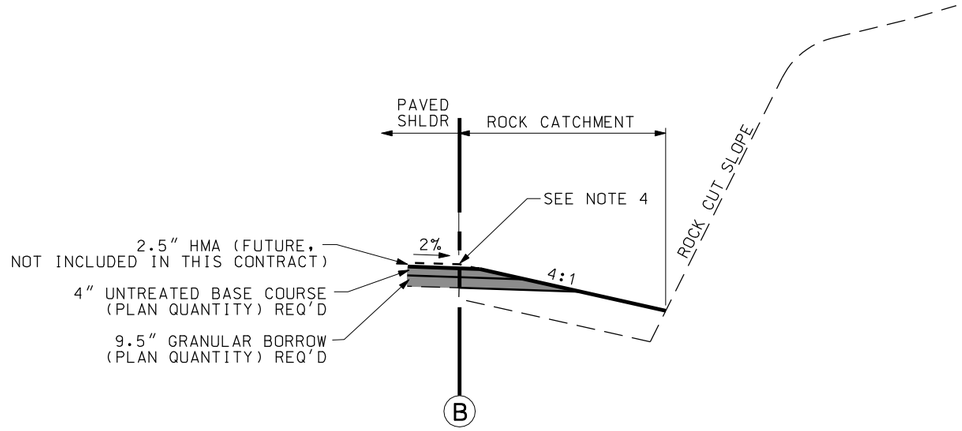
TYPICAL SECTION

DESIGN SPEED 40 MPH
STA 361+00 TO STA 490+00



GUARDRAIL DETAIL

SEE NOTE 1



ROCK CATCHMENT DETAIL

NOTES:

1. GUARDRAIL TO BE LOCATED WHERE FILLS ARE GREATER THAN 10′ IN HEIGHT. REFER TO ROADWAY PLAN (RD) SHEETS FOR GUARDRAIL LOCATIONS

2. THESE WIDTHS VARY BETWEEN STA 361+00 TO STA 362+00 AND STA 486+22.5 TO STA 490+00 AS NEEDED TO TRANSITION FROM THE WIDTHS OF EXISTING ROAD TO THE NEW ROADWAY WIDTHS SHOWN.

3. MAINTAIN THE SHOWN ALGEBRAIC DIFFERENCE BETWEEN THE PAVED AND GRAVEL SURFACES IN THE LOCATIONS WHERE THE ROADWAY IS BEING SUPERELEVATED.

4. MAINTAIN THE 4:1 SLOPE AND LET THE ALGEBRAIC DIFFERENCE VARY IN LOCATIONS WHERE ROADWAY IS BEING SUPERELEVATED AND ROCK CATCHMENTS ARE BEING CONSTRUCTED.

NOTES (CONT):

5. FOR SUPERELEVATION INFORMATION, REFER TO THE SUPERELEVATION DIAGRAMS ON THE ROADWAY PROFILE (RP) SHEETS LOCATED IN THE BASE BID PACKAGE.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN

DRAWN BY: DB
QC CHECKED BY: TY
APPROVED
DATE: 2/19/08
PROFESSIONAL ENGINEER

PROJECT: BROWNS PARK ROAD
JESSE EWING CANYON
PROJECT NUMBER: STP-1364(4)15

TYPICAL SECTION

SHEET NO. TS-1-A1

SUMMARY OF ITEMS

DESCRIPTION	UNIT	USE
MOBILIZATION	LUMP	**1**
TRAFFIC CONTROL	LUMP	**1**
DUST CONTROL AND WATERING	1000 GAL	**1,050**
GRANULAR BORROW (PLAN QUANTITY)	CU YD	**16,000**
ROADWAY EXCAVATION (PLAN QUANTITY)	CU YD	**60**
UNTREATED BASE COURSE (PLAN QUANTITY)	CU YD	**6,065**
RIGHT-OF-WAY FENCE, TYPE A (WOOD POST)	FEET	**300**
RIGHT-OF-WAY GATE 16 FT	EACH	**1**
PRECAST CONCRETE CATTLE GUARD	EACH	**2**
W-BEAM GUARDRAIL 96 INCH WOOD POSTS	FEET	**11,000**
W-BEAM GUARDRAIL ANCHOR TYPE I	EACH	**21**
DELINEATOR TYPE I	EACH	**145**
DELINEATOR - CULVERT MARKER	EACH	**39**
CRASH CUSION TYPE G	EACH	**21**
SIGN TYPE PW-1, 24 INCH X 24 INCH	EACH	**2**
SIGN TYPE PW-1, 24 INCH X 30 INCH	EACH	**2**
SIGN TYPE PW-1, 36 INCH X 36 INCH	EACH	**2**
SIGN TYPE PW-2, 24 INCH X 18 INCH	EACH	**10**
SIGN TYPE PW-2, 30 INCH X 30 INCH	EACH	**10**
WOOD FIBER MULCH	1000 SQ FT	**5**
BROADCAST SEED	1000 SQ FT	**5**

EARTHWORK SUMMARY SHEET

LINE	STATION		LENGTH	ROADWAY EXCAVATION (PLAN QUANTITY)	EMBANKMENT	REMARKS
	FROM	TO	FEET	CU YD	CU YD	
LINE D	10+00.00	12+48.19	248		1,254	
LINE E	10+00.00	11+51.11	151	55	131	
TOTAL				55	1,384	
USE				**60**	*	* **For information only**

DUST CONTROL AND WATERING SUMMARY SHEET

LINE	FROM	TO	LENGTH	WATERING						DUST CONTROL						TOTALS	REMARKS
				EMBANKMENT RATE		GRANULAR BORROW RATE		UNTREATED BASE COURSE RATE		EMBANKMENT RATE		GRANULAR BORROW RATE		UNTREATED BASE COURSE RATE			
				35.0 GAL/YD³		33.0 GAL/YD³		33.0 GAL/YD³		10.0 GAL/YD³		9.0 GAL/YD³		18.0 GAL/YD³			
	STATION	STATION	FEET	CU YD	1000 GAL	CU YD	1000 GAL	CU YD	1000 GAL	CU YD	1000 GAL	CU YD	1000 GAL	CU YD	1000 GAL	1000 GAL	
BROWNS PARK ROAD	361+00	490+00	12,900			16,000	528	6,065	200			16,000	144	6,065	109	981	
LINE D	10+00.00	12+48.19	248	1,254	44					1,254	13					56	DT-2-A1, LINE D ACCESS ROAD
LINE E	10+00.00	11+51.11	151	131	5					131	1					6	DT-3-A1, LINE E ACCESS ROAD
TOTAL																1,044	
USE																**1,050**	

REVISIONS

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UTAH DEPARTMENT OF TRANSPORTATION
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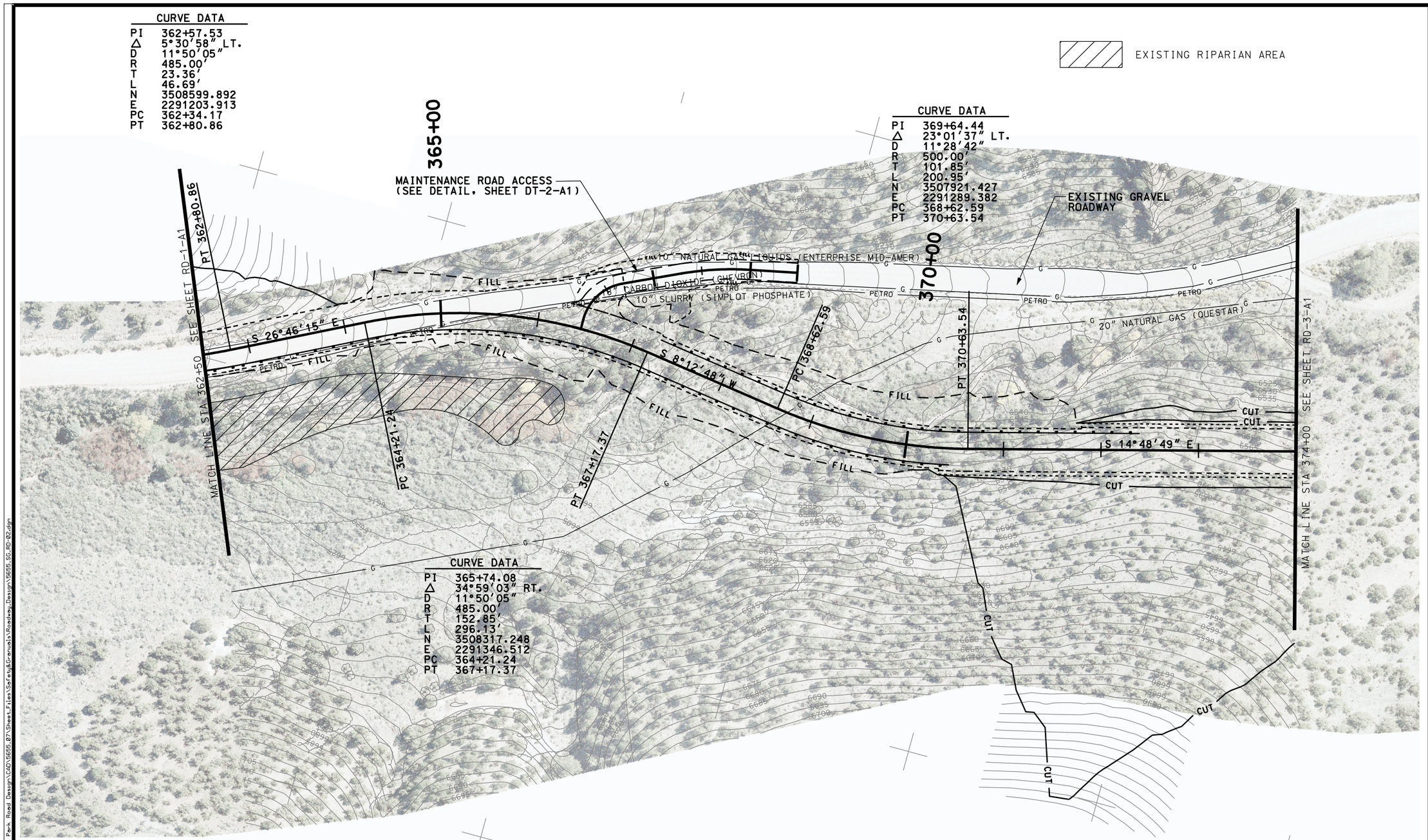
DRAWN BY DB
QC CHECKED BY TY
DATE 2 / 19 / 08
APPROVED
PROFESSIONAL ENGINEER

PROJECT BROWNS PARK ROAD
JESSE EWING CANYON
PROJECT NUMBER STP-1364(4)15
SUMMARY SHEET

SHEET NO. SM-1-A1

19-FEB-2008 DGN File: D:\2007\07189 - Browns Park Road Design\C4D\5665_07\Shawn_Files\Safety&Granuals\Summary\5665_SG_SM-01.dgn



W-BEAM GUARDRAIL 96 INCH WOOD POST REQ'D
STA 362+50.0 17.0' RT TO STA 370+45.0 17.0' RT
STA 367+25.0 17.0' LT TO STA 372+39.5 17.0' LT

W-BEAM GUARDRAIL ANCHOR TYPE II REQ'D
STA 367+25.0 17.0' LT
STA 370+45.0 17.0' RT

CRASH CUSHION TYPE G REQ'D
STA 372+39.5 17.0' LT

NOTE:
1. STATIONS AND OFFSETS FOR W-BEAM GUARDRAIL ARE SHOWN TO THE FACE OF THE RAIL.

0 50 100 200
SCALE IN FEET

NO.	DATE	APPROVED BY	REMARKS

REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN

DRAWN BY DB
QC CHECKED BY TY
DATE 2/19/08

APPROVED

PROFESSIONAL ENGINEER

PROJECT BROWNS PARK ROAD
JESSE EWING CANYON
PROJECT NUMBER STP-1364(4)15

ROADWAY PLAN SHEET

SHEET NO. RD-2-A1

19-FEB-2008 DGN File:D:\2007\07109 - Browns Park Road Design\CAD\5655_07\Sheet_Files\Safety&Grandeur\Roadway Design\5655_55_RD-02.dgn

Measurement and Payment

STP-1364(4)15

The Department will measure and pay for each bid item as detailed in this section. Payment is contingent upon acceptance by the Department.

Items are listed by Specification and in tables as follows:

Item #	Bid Item Number	Bid Item Name	Unit of Measurement and Payment

Base Bid

1	**012850010**	**Mobilization**	**Lump sum**
	Amount Paid		**When Paid**
	The lesser of 25% of Mobilization or 2.5% of contract		With first estimate
	The lesser of 25% of Mobilization or 2.5% of contract		With estimate following completion of 5% of contract
	The lesser of 25% of Mobilization or 2.5% of contract		With estimate following completion of 10% of contract
	The lesser of 25% of Mobilization or 2.5% of contract		With estimate following completion of 20% of contract
	Amount bid in excess of 10% of contract price.		Project Acceptance-Final
In addition to mobilization costs, item also includes all costs required to conform to Section 02924: Invasive Weed Control and the Paleontologist requirements in Section 01355M: Environmental Protection.			

2	**013150010**	**Public Information Services**	**Lump Sum**
	Amount Paid		**When Paid**
	25% of bid item amount		With first estimate
	Remaining portion of bid item paid as a percentage of the contract completed		With each subsequent estimate

3	**015540005**	**Traffic Control**	**Lump Sum**
	Amount Paid		**When Paid**
	25% of the bid item amount		With first estimate
	Remaining portion of bid item paid as a percentage of the contract completed		With each subsequent estimate

40	**029220030**	**Broadcast Seed**	**Acre**

41	**029310020**	**Willow Planting**	**Each**

42	**02932011P**	**Wetland Plantings – 18 inch**	**Each**
Includes all labor and materials required to plant the Wetland Plantings according to the mitigation plans and specifications.			

43	**02932013P**	**Riparian Plantings – 18 inch**	**Each**
Includes all labor and materials required, including bark, to plant the Riparian Plantings according to the mitigation plans and specifications.			

Additive Bid #1

44	**012850010**	**Mobilization**	**Lump sum**
	Amount Paid		**When Paid**
	The lesser of 25% of Mobilization or 2.5% of contract		With first estimate
	The lesser of 25% of Mobilization or 2.5% of contract		With estimate following completion of 5% of contract
	The lesser of 25% of Mobilization or 2.5% of contract		With estimate following completion of 10% of contract
	The lesser of 25% of Mobilization or 2.5% of contract		With estimate following completion of 20% of contract
	Amount bid in excess of 10% of contract price.		Project Acceptance-Final

45	**015540005**	**Traffic Control**	**Lump Sum**
	Amount Paid		**When Paid**
	25% of the bid item amount		With first estimate
	Remaining portion of bid item paid as a percentage of the contract completed		With each subsequent estimate

46	**015720020**	**Dust Control and Watering**	**1000 Gallon**
Includes any hauling, storage, pumps, or other facilities required to supply water.			

47	**020560015**	**Granular Borrow (Plan Quantity)**	**Cubic Yard**

48	**023160020**	**Roadway Excavation (Plan Quantity)**	**Cubic Yard**

49	**027210020**	**Untreated Base Course (Plan Quantity)**	**Cubic Yard**